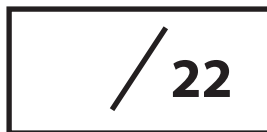


Name 1: _____

Name 2: _____

Period: _____ Table: _____



Part 1- Research

1. Find the percentages of each of the following molecules of our atmosphere [7 points]

Note the numbers may not add-up to 100%

Carbon Monoxide (CO): _____

Water Vapor (H₂O): _____

Nitrogen (N₂): _____

Nitrogen Dioxide (NO₂): _____

Oxygen (O₂): _____

Ozone (O₃): _____

Carbon Dioxide (CO₂): _____

2. What will each of the following four EM waves do to the molecules in our atmosphere? [4 points]

Answer in complete sentences.

Microwave:

Infrared (IR):

Visible:

Ultraviolet (UV):

Part 2- Experiment

Run Now:

<http://phet.colorado.edu/en/simulation/molecules-and-light>

Data: [7 points]

Using the simulation above, individually fire the four EM waves at the various molecules. Record your observations in the table below. *Make sure that at least 10 photons hit the molecule. "Reset Molecule" as needed.*

Table 1 - Data Table

<i>Molecule</i>	<i>Microwave</i>	<i>Infrared</i>	<i>Visible</i>	<i>Ultraviolet</i>
CO				
N ₂				
O ₂				
CO ₂				
H ₂ O				
NO ₂				
O ₃				

Questions: Answer in complete sentences [1 point each]

1. What did the **microwaves** do to the various molecules?
2. What did the **infrared waves** do to the various molecules?
3. What did the **visible waves** do to the various molecules?
4. What did the **ultraviolet waves** do to the various molecules?

Bonus: [2 points]

Why does each wave produce similar reactions in the molecules?